NRCS Natural Resources Conservation Service

Utah Water Supply Outlook Report

March, 2007

Mt Baldy Snow Course, February 2007, Central Utah, Wasatch Plateau.
Photo by Brooke Nelson, NRCS, USDA .

Water Supply Outlook Reports
and Federal - State - Private Cooperative Snow Surveys

For more water supply and resource management information, contact:

Snow Survey Staff, 245 N Jimmy Doolittle Rd, SLC Utah, 84041 - Phone: (801)524-5213
Vane O. Campbell, Area Conservationist, 340 N. 600 E., Richfield, UT 84701 - Phone: (435) 896-6441
Kerry Goodrich, Area Conservationist, 2871 S Commerce Way, Ogden UT 84401 (801)629-0575
Barry Hamilton, Area Conservationist, 540 W, Price River Dr. Price, UT 84501-2813 - Phone: (435) 637-0041
Internet Address: http://www.ut.nrcs.usda.gov/snow/

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snowcourses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

STATE OF UTAH GENERAL OUTLOOK
Mar 1, 2007

SUMMARY

February was, thank goodness -not January. A return to some small sense of normalcy is quite welcome after the bitter cold and dry of that hopefully soon to be forgotten month. In northern Utah, there was near normal snowpack accumulation in the mountains. February accumulations - that amount of snow that fell in February - ranged from 90% of average in the Uintahs to 106% of average on the Weber watershed. Southern Utah was not nearly as fortunate and received only 43% to 71% of average February accumulations. This was not nearly sufficient to bring snowpacks back to near normal conditions. What was needed was 140% to 170% of normal accumulation. This leaves us in the current position of having snowpacks that range from 59% of average in southwest Utah to 78% of average on the Uintahs. Most areas have between 60% and 75% of average snowpacks. Here are the dismal numbers - how much snow accumulation do we need in March to get to average by April 1: Bear River - 234%, Weber - 230%, Utah Lake - 245%, Uintahs - 201%, SE Utah - 303%, Sevier - 250%, SW Utah - 421% and statewide - 243%. While those numbers are discouraging enough, we must consider the probability of getting between 200% and 400% of normal snow accumulation in March: Bear - 0%, Weber - 0%, Utah Lake - 0%, Uintahs - 3%, SE Utah - 0%, Sevier - 8%, SW Utah - 14% and statewide - 0%. While it is not likely that we are going to get back to average, given just average March accumulation would put the watersheds at: Bear - 77%, Weber - 77%, Utah Lake - 75%, Uintahs - 82%, SE Utah - 66%, Sevier - 75%, SW Utah - 75% and statewide - 76% by April 1, a little better than they are now. March needs to go big to take the sting out of this season. Soil moisture started the annual upswing this past month: Bear - 67%, Weber - 63%, Provo - 50%, Uintah Basin - 41%, southeast Utah - 48%, Sevier - 49%, southwest Utah - 45% and statewide - 50% of saturation. These values are a little higher than last year. In general, most areas of the state have excellent reservoir carryover. General water supply conditions range from below to much above average. Streamflow forecasts range from 16% to 86% of average. Surface Water Supply Indices range from 21% on the Bear River, to 79% on the west side of the Uintah Basin.

SNOWPACK

March first snowpacks as measured by the NRCS SNOTEL are as follows: Bear - 72%, Weber - 72%, Provo - 69%, Uintahs - 78%, southeast Utah - 60%, Sevier - 69%, southwest Utah - 59% and the statewide figure is 71% of average. Recent storms have brought snowpacks up 5% to 8% state wide and have put at least some snow back on south facing aspects and lower elevations. Utah needs between 200% and 400% of normal snowpack accumulation in March to reach average conditions. The probability of getting this accumulation ranges between 0 and 14% with most areas at 0%.

PRECIPITATION

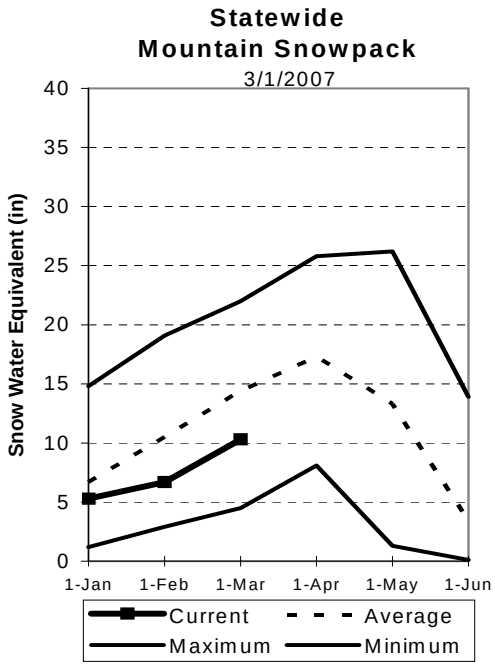
Mountain precipitation during February was near normal in northern Utah (106%-110%) below to much below normal across southern Utah (60%-82%). This brings the seasonal accumulation (Oct-Feb) to 88% of average statewide and ranges from 83% on the Bear to 96% over southeastern Utah.

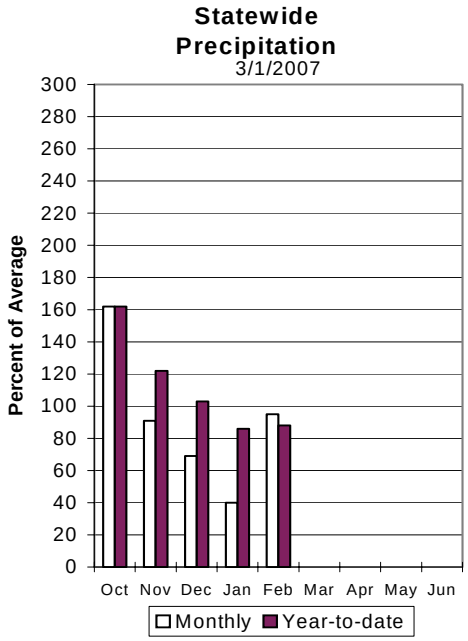
RESERVOIRS

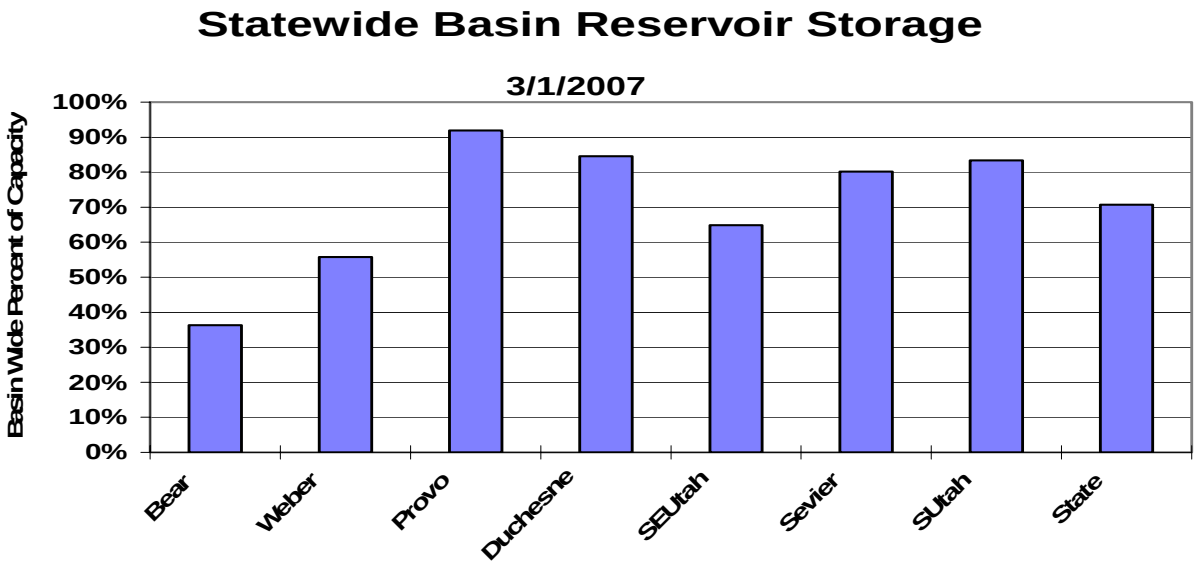
Storage in 41 of Utah's key irrigation reservoirs is at 71% of capacity up 3% from last month. This is also an increase of 3% from last year. Reservoirs across the State have been making steady gains in storage. Bear Lake really is the last reservoir to remain in an extremely low condition due to the prolonged drought.

STREAMFLOW

Snowmelt streamflows are expected to have a wide range from much below average to near average across the state of Utah this year. Forecast streamflows range from 16% on North Creek nr Monticello to 86% of average for the Bear River nr State Line. Most flows are forecast to be in the 50% to 70% range.

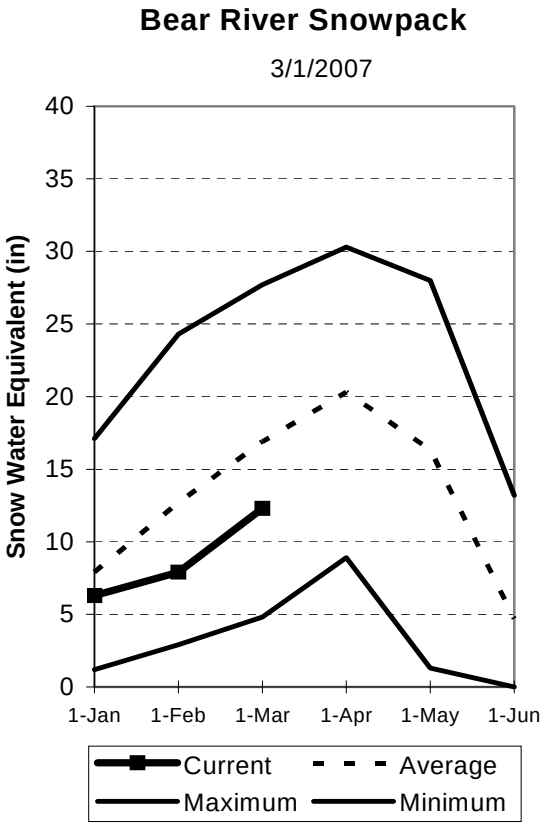


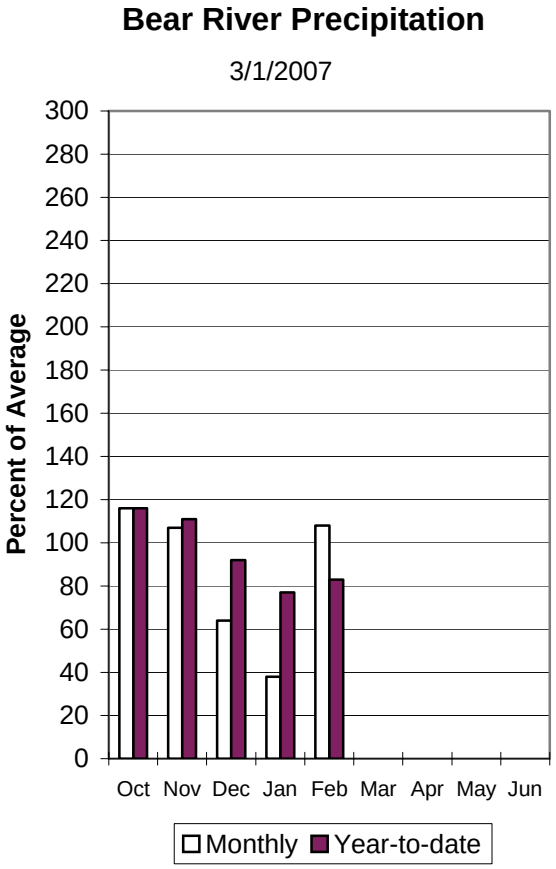


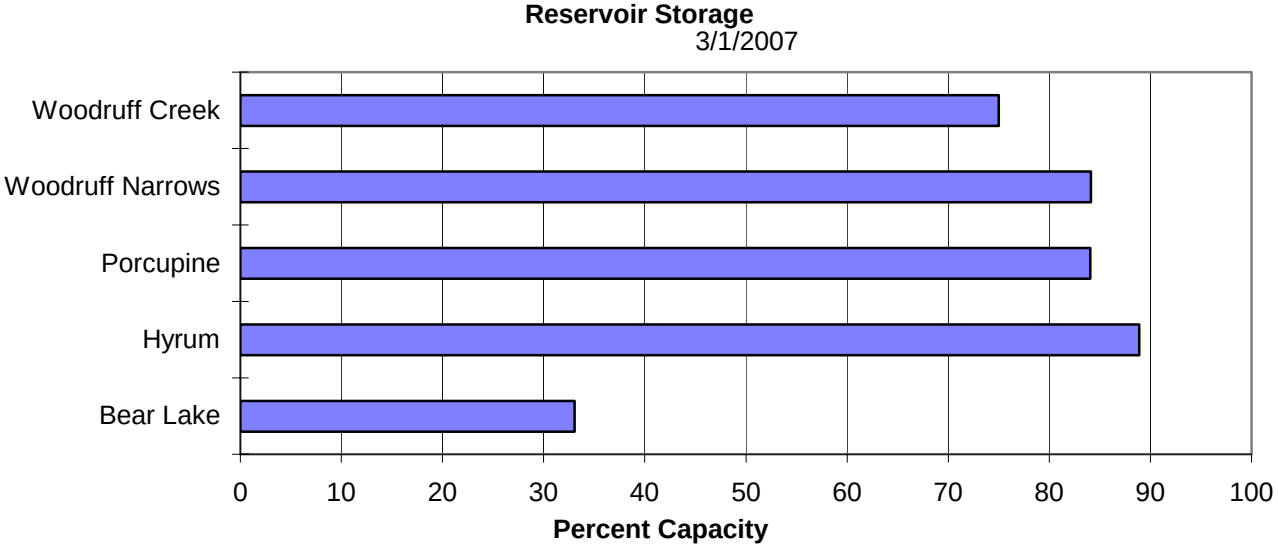


Bear River Basin
March 1, 2007

Snowpacks on the Bear River Basin are below average at 73% of normal, about 59% of last year. Specific sites range from 56% to 113% of normal. February precipitation was average at 100%, which brings the seasonal accumulation (Oct-Feb) to 83% of average. Soil moisture levels in runoff producing areas are at 67% of saturation in the upper 2 feet of soil compared to 58% last year. This is due mainly to above average precipitation in October. Forecast streamflows range from much below average to below average (61%-86%) volumes this spring. Reservoir storage is low at 36% of capacity, 11% more than last year. The Surface Water Supply Index is at 21% for the Bear River, or 79% of years have had more total water available. Water supply conditions are much below normal due to low streamflow and reservoir storage. 234% of normal increase in March SWE is need for an average April 1st SWE.







BEAR RIVER BASIN
Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear River nr UT-WY State Line	APR-JUL	70	86	97	86	109	128	113
Bear River ab Reservoir nr Woodruff	APR-JUL	52	81	105	77	132	176	136
Big Creek nr Randolph	APR-JUL	1.1	2.1	3.0	61	4.0	5.8	4.9
Smiths Fork nr Border	APR-JUL	47	60	70	68	81	98	103
Bear River at Stewart Dam	APR-JUL	70	116	154	66	197	270	234
Little Bear River at Paradise	APR-JUL	14.5	23	29	63	36	48	46
Logan R Abv State Dam Nr Logan	APR-JUL	50	69	85	68	102	130	126
Blacksmith Fk Abv Up&L Dam Nr Hyrum	APR-JUL	18.4	27	33	69	40	52	48

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1302.0	430.6	290.3	---
HYRUM	15.3	13.6	10.4	11.0
PORCUPINE	11.3	9.5	9.7	5.6
WOODRUFF NARROWS	57.3	48.2	35.0	27.6
WOODRUFF CREEK	4.0	3.0	3.5	---

BEAR RIVER BASIN
Watershed Snowpack Analysis - March 1, 2007

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
BEAR RIVER, UPPER (abv Ha	6	63	75
BEAR RIVER, LOWER (blw Ha	8	56	72
LOGAN RIVER	4	52	71
RAFT RIVER	1	61	107
BEAR RIVER BASIN	14	59	73

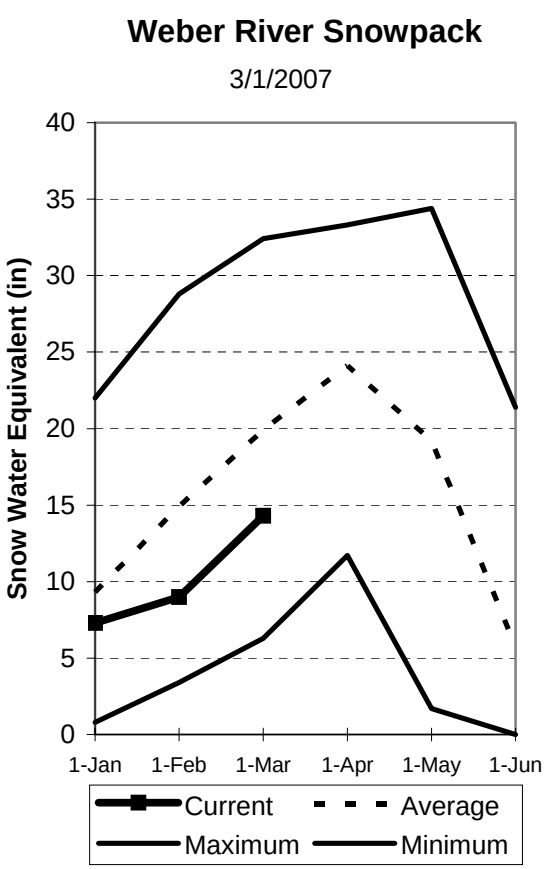
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

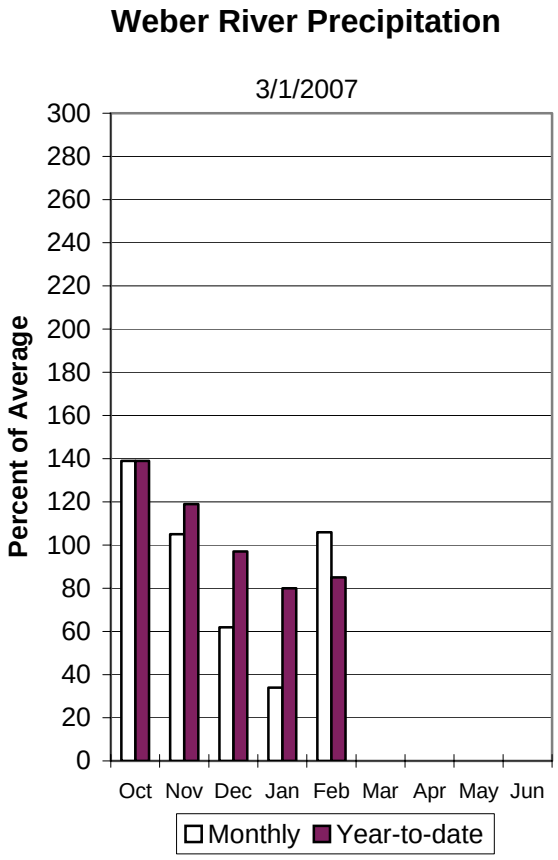
The average is computed for the 1971-2000 base period.

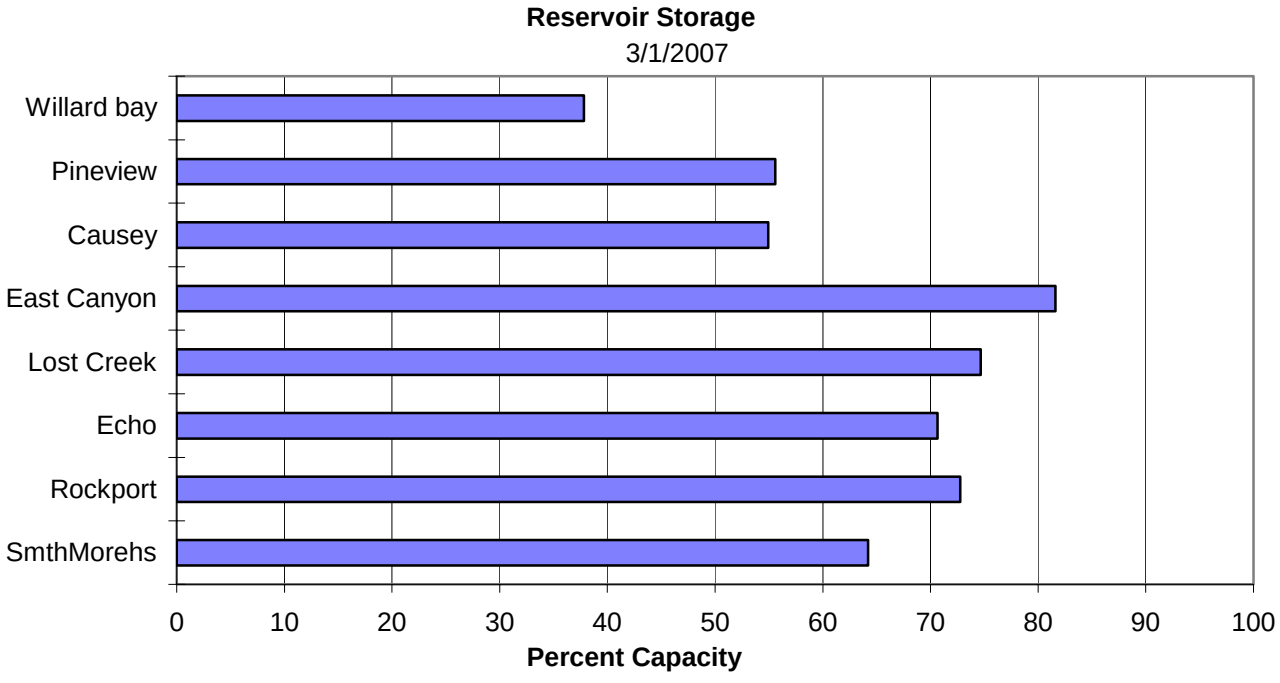
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Weber and Ogden River Basins
March 1, 2007

Snowpack on the Weber and Ogden Watersheds is below average at 72%, about 62% of last year. Individual sites range from 32% to 94% of average. February precipitation was average at 106% bringing the seasonal accumulation (Oct-Feb) to 85% of average. Soil moisture levels in runoff producing areas are at 63% of saturation in the upper 2 feet of soil compared to 54% last year. Streamflow forecasts range from 55% to 89% of average. Reservoir storage is at 56% of capacity, 18% lower than last year. The Surface Water Supply Index is at 27% for the Weber River and at 26% for the Ogden River. Overall water supply conditions are below normal with very little probability of reaching April 1st average snow water equivalent.







WEBER & OGDEN WATERSHEDS in Utah
Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== 90% (1000AF)	70% (1000AF)	Future Conditions 50% (1000AF)	50% (% AVG.)	======= Wetter =====>> 30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Smith & Morehouse Res inflow	APR-JUL	20	25	28	82	31	36	34
Weber River nr Oakley	APR-JUL	70	88	100	81	112	130	123
Weber River nr Coalville	APR-JUL	88	97	103	75	109	119	137
Chalk Creek at Coalville	APR-JUL	21	32	40	89	49	65	45
Echo Reservoir inflow	APR-JUL	88	119	140	78	161	192	179
Lost Creek Reservoir inflow	APR-JUL	5.0	7.8	10.0	57	12.5	16.7	17.6
East Canyon Reservoir inflow	APR-JUL	12.3	17.7	22	71	27	35	31
Weber River at Gateway	APR-JUL	215	235	250	70	265	285	355
SF Ogden River nr Huntsville	APR-JUL	19.6	28	35	55	43	55	64
Pineview Reservoir inflow	APR-JUL	39	59	75	56	93	123	133
Wheeler Creek nr Huntsville	APR-JUL	1.8	2.9	3.8	60	4.8	6.5	6.3

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEBER & OGDEN WATERSHEDS in Utah
Reservoir Storage (1000 AF) - End of February

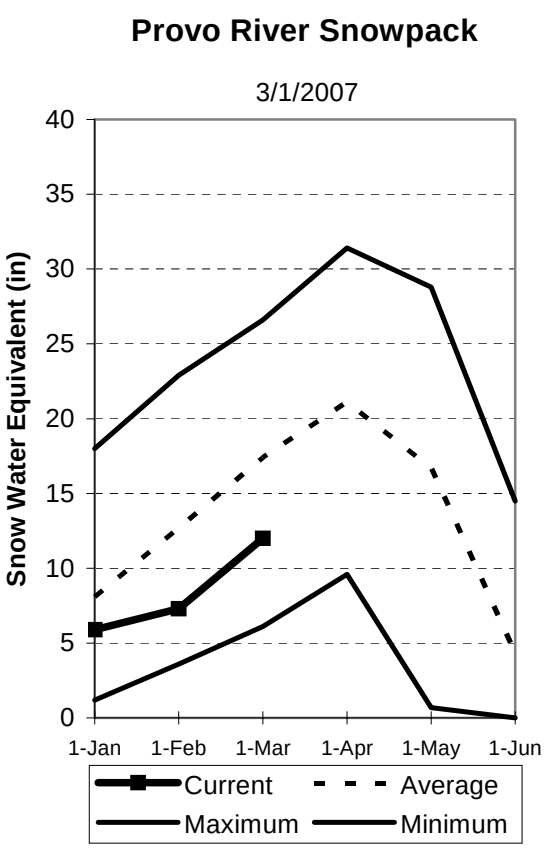
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CAUSEY	7.1	3.9	2.6	2.6
EAST CANYON	49.5	40.4	36.0	35.4
ECHO	73.9	52.2	52.4	51.0
LOST CREEK	22.5	16.8	15.7	13.9
PINEVIEW	110.1	61.2	54.7	52.6
ROCKPORT	60.9	44.3	41.3	33.2
WILLARD BAY	215.0	81.3	194.2	154.9

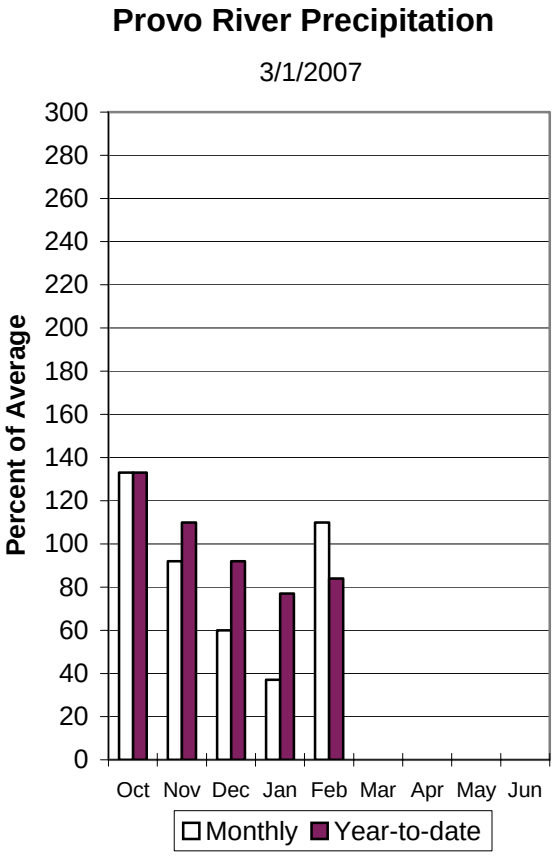
WEBER & OGDEN WATERSHEDS in Utah
Watershed Snowpack Analysis - March 1, 2007

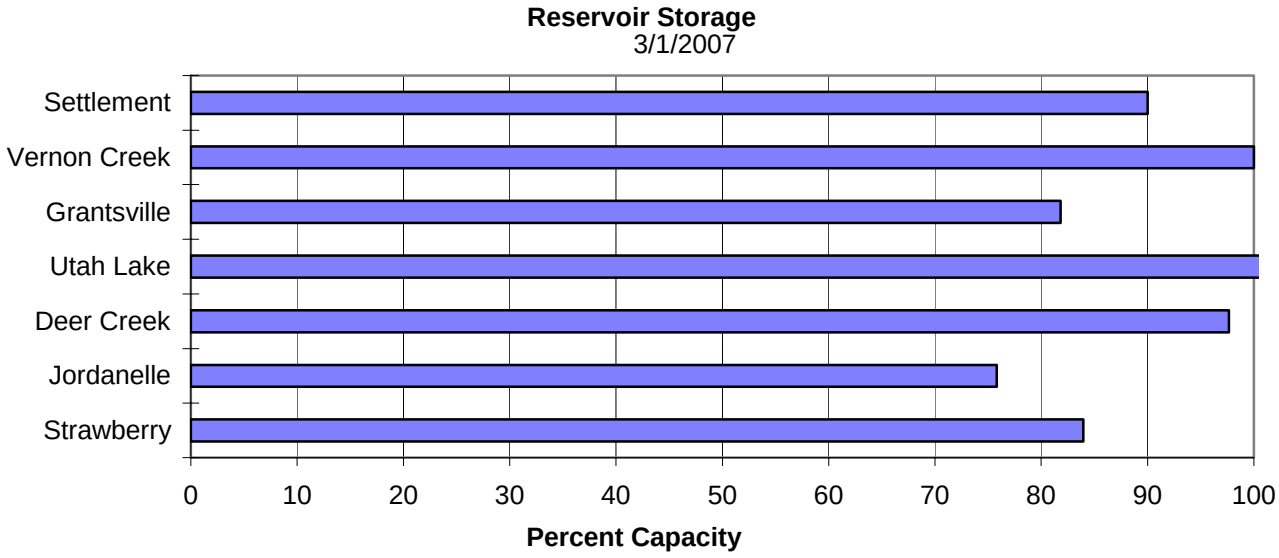
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
OGDEN RIVER	4	56	60
WEBER RIVER	9	67	79
WEBER & OGDEN WATERSHEDS	13	63	72

Utah Lake, Jordan River & Tooele Valley Basins
March 1, 2007

Snowpack over these regions are much below average at 69%, which is 61% of last year and up 12% from last month. Individual sites range from 54% to 87% of average. February precipitation was above average at 110%, bringing the seasonal accumulation (Oct-Feb) to 84% of average. Soil moisture levels in runoff producing areas are at 50% of saturation in the upper 2 feet of soil compared to 47% last year. Reservoir storage is at 92% of capacity, 6% higher than last year. Streamflow forecasts range from 52% to 74% of average. The Surface Water Supply Index is at 56%, indicating general water supply conditions are near normal due to good reservoir carryover.







UTAH LAKE, JORDAN RIVER & TOOELE VALLEY
Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Spanish Fork River nr Castilla	APR-JUL	14.7	31	45	58	62	92	77
Provo River nr Woodland	APR-JUL	46	60	70	68	81	100	103
Provo River nr Hailstone	APR-JUL	46	61	72	66	84	104	109
Deer Creek Resv Inflow	APR-JUL	53	66	75	60	85	101	126
American Fk Abv Upper Powerplant	APR-JUL	11.8	16.4	20	63	24	30	32
Utah Lake inflow	APR-JUL	103	140	169	52	200	250	325
West Canyon Ck Nr Cedar Fort	APR-JUL	0.6	1.1	1.5	63	2.0	2.8	2.4
Little Cottonwood Ck nr SLC	APR-JUL	19.3	24	28	70	32	38	40
Big Cottonwood Ck nr SLC	APR-JUL	17.9	23	26	68	30	36	38
Mill Creek nr SLC	APR-JUL	2.8	4.0	4.9	70	5.9	7.6	7.0
Parley's Creek nr SLC	APR-JUL	4.9	8.2	10.9	65	14.0	19.3	16.7
Dell Fork nr SLC	APR-JUL	1.4	2.7	3.8	56	5.1	7.4	6.8
Emigration Creek nr SLC	APR-JUL	0.7	1.6	2.4	53	3.4	5.1	4.5
City Creek nr SLC	APR-JUL	3.3	4.9	6.1	70	7.5	9.7	8.7
Vernon Creek nr Vernon	APR-JUL	0.3	0.6	0.9	62	1.2	1.8	1.5
Settlement Creek Abv Resv Nr Tooele	APR-JUL	0.5	0.9	1.3	62	1.7	2.4	2.1
South Willow Creek nr Grantsville	APR-JUL	1.4	1.9	2.4	74	2.9	3.7	3.2

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DEER CREEK	149.7	146.2	123.7	107.4
GRANTSVILLE	3.3	2.7	2.5	2.2
SETTLEMENT CREEK	1.0	0.9	0.9	0.6
STRAWBERRY-ENLARGED	1105.9	928.5	838.1	637.8
UTAH LAKE	870.9	931.5	869.6	825.1
VERNON CREEK	0.6	0.6	0.5	---

UTAH LAKE, JORDAN RIVER & TOOELE VALLEY
Watershed Snowpack Analysis - March 1, 2007

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
PROVO RIVER & UTAH LAKE	7	59	62
PROVO RIVER	4	58	64
JORDAN RIVER & GREAT SALT	6	60	75
TOOELE VALLEY WATERSHEDS	3	81	71
UTAH LAKE, JORDAN RIVER &	16	62	69

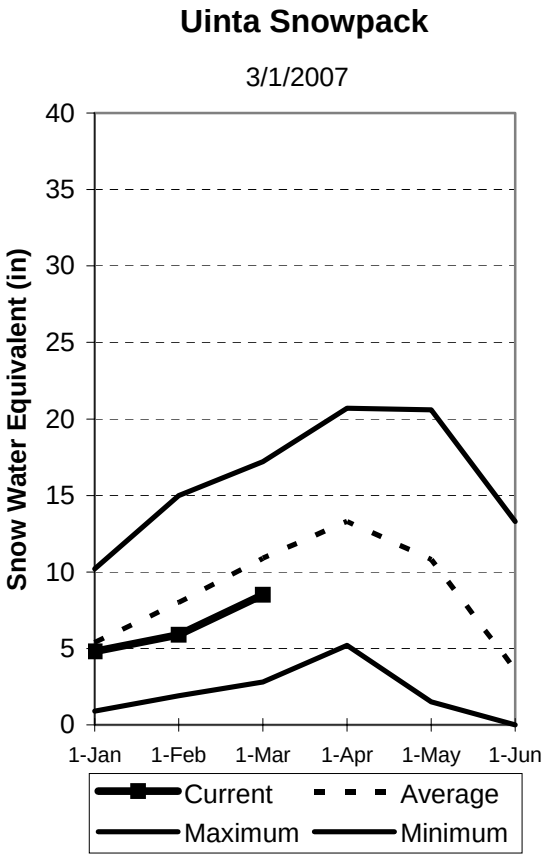
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

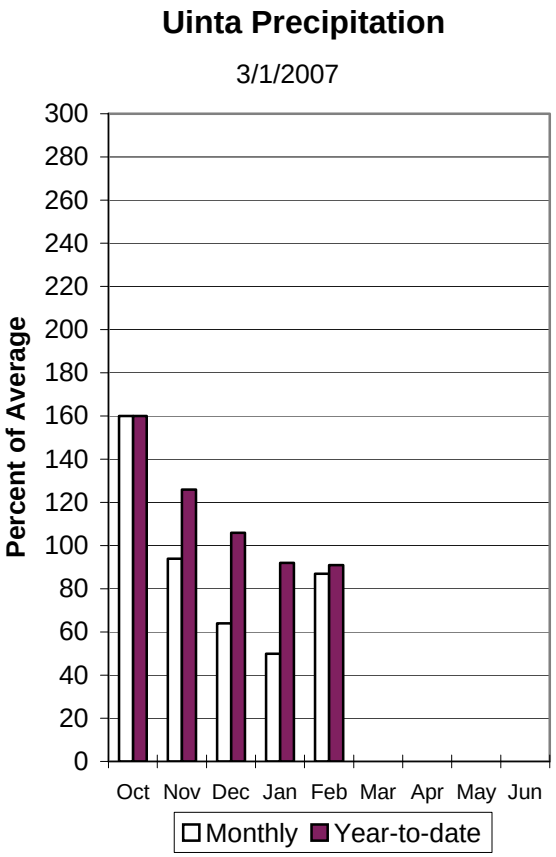
The average is computed for the 1971-2000 base period.

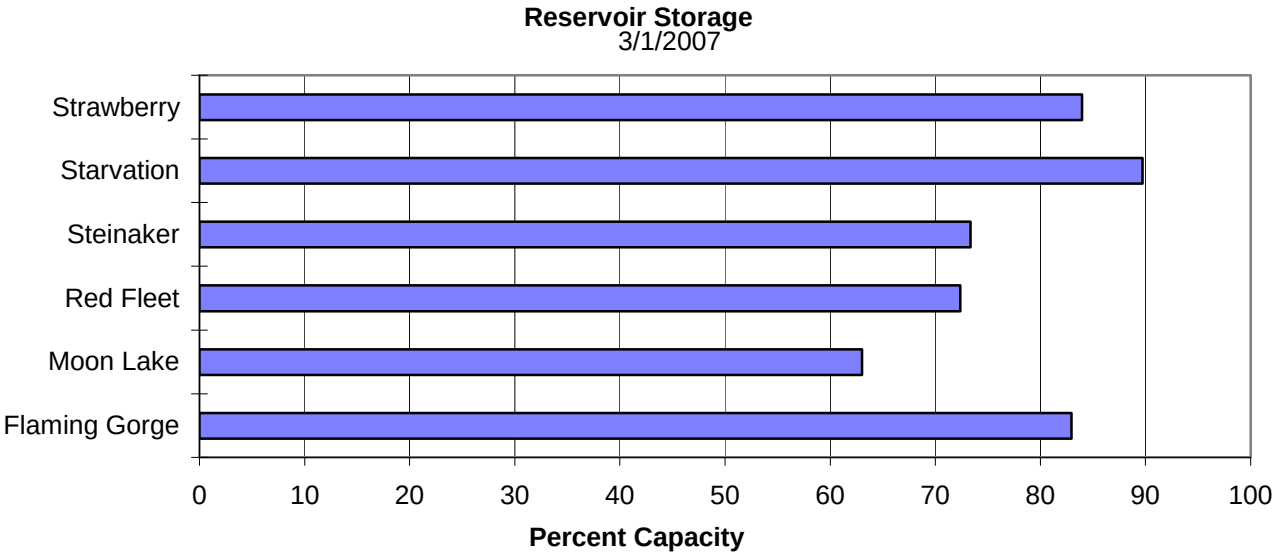
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Uintah Basin and Dagget SCD's
March 1, 2007

Snowpack across the Uintah Basin and North Slope areas is below average at 78%, which is 77% of last year. The North Slope ranges from 69% to 110% and the South Slope ranges from 64% to 90% of average. Precipitation during February was below average at 87% bringing the seasonal accumulation (Oct-Feb) to 90% of average. Soil moisture values in runoff producing areas are at 41% of saturation in the upper 2 feet of soil compared to 32% last year. Reservoir storage is at 85% of capacity, 7% more than last year. Streamflow forecasts range from 52% to 84% of average. The Surface Water Supply Index for the western area is 79% and for the eastern area it is 45% indicating above normal conditions on the west side and near normal for the eastern area. General water supply conditions range from above to near average from west to east thanks to excellent reservoir carryover.







UINTAH BASIN & DAGGET SCD'S
Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Blacks Fork nr Robertson	APR-JUL	51	65	76	80	88	106	95
EF of Smiths Fork nr Robertson	APR-JUL	13.4	18.3	22	76	26	33	29
Flaming Gorge Reservoir Inflow (2)	APR-JUL	382	565	710	60	872	1140	1190
Big Brush Ck abv Red Fleet Resv	APR-JUL	10.1	14.3	17.6	84	21	27	21
Ashley Creek nr Vernal	APR-JUL	26	35	42	81	50	62	52
WF Duchesne River nr Hanna (2)	APR-JUL	8.8	12.3	15.0	63	18.0	23	24
Duchesne R nr Tabiona (2)	APR-JUL	40	54	66	63	79	99	105
Upper Stillwater Resv Inflow	APR-JUL	44	53	60	73	67	78	82
Rock Ck nr Mountain Home (2)	APR-JUL	49	60	68	76	76	90	89
Duchesne R abv Knight Diversion (2)	APR-JUL	87	112	130	69	150	181	188
Strawberry R nr Soldier Springs (2)	APR-JUL	13.7	24	33	56	43	61	59
Currant Creek Reservoir Inflow (2)	APR-JUL	4.8	10.2	15.0	60	21	31	25
Strawberry R nr Duchesne (2)	APR-JUL	28	47	63	52	81	113	121
Lake Fork River Moon Lake Inflow	APR-JUL	36	44	50	74	57	67	68
Yellowstone River nr Altonah	APR-JUL	29	38	45	73	53	65	62
Duchesne R at Myton (2)	APR-JUL	56	106	150	58	201	290	260
Whiterocks near Whiterocks	APR-JUL	26	36	44	79	53	67	56
Duchesne R nr Randlett (2)	APR-JUL	65	126	180	56	243	353	324

UINTAH BASIN & DAGGET SCD'S
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
FLAMING GORGE	3749.0	3110.0	3034.0	2919.0
MOON LAKE	49.5	31.2	30.7	29.8
RED FLEET	25.7	18.6	22.3	18.4
STEINAKER	33.4	24.5	31.2	22.8
STARVATION	165.3	148.3	137.8	135.9
STRAWBERRY-ENLARGED	1105.9	928.5	838.1	637.8

UINTAH BASIN & DAGGET SCD'S
Watershed Snowpack Analysis - March 1, 2007

Watershed	Number of Data Sites	This Year as % of: Last Yr	Average
UPPER GREEN RIVER in UTAH	6	103	86
ASHLEY CREEK	2	137	77
BLACK'S FORK RIVER	2	76	82
SHEEP CREEK	1	183	110
DUCHESNE RIVER	11	70	74
LAKE FORK-YELLOWSTONE CRE	4	67	73
STRAWBERRY RIVER	4	63	70
UINTAH-WHITEROCKS RIVERS	2	102	88
UINTAH BASIN & DAGGET SCD	17	77	78

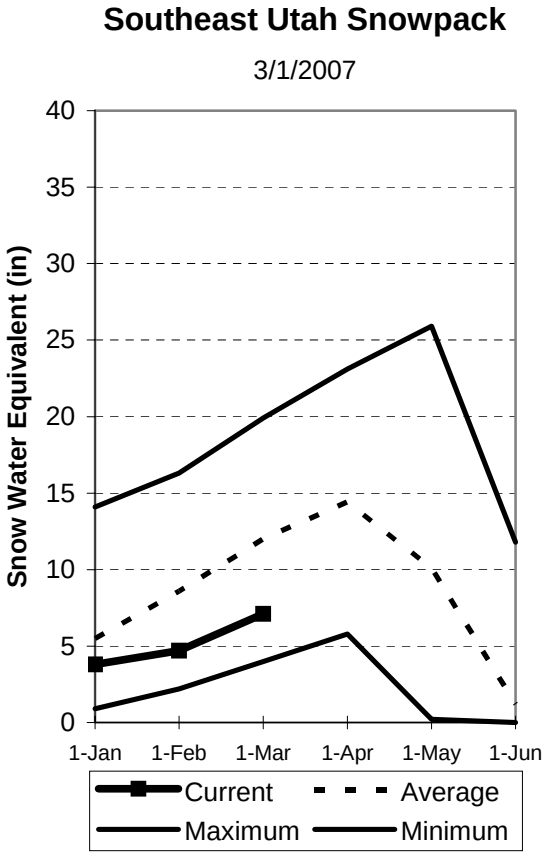
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

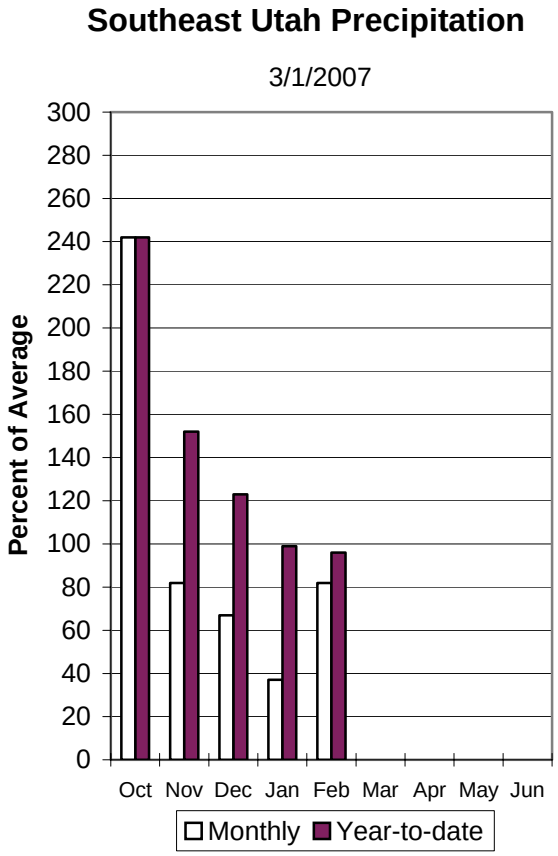
The average is computed for the 1971-2000 base period.

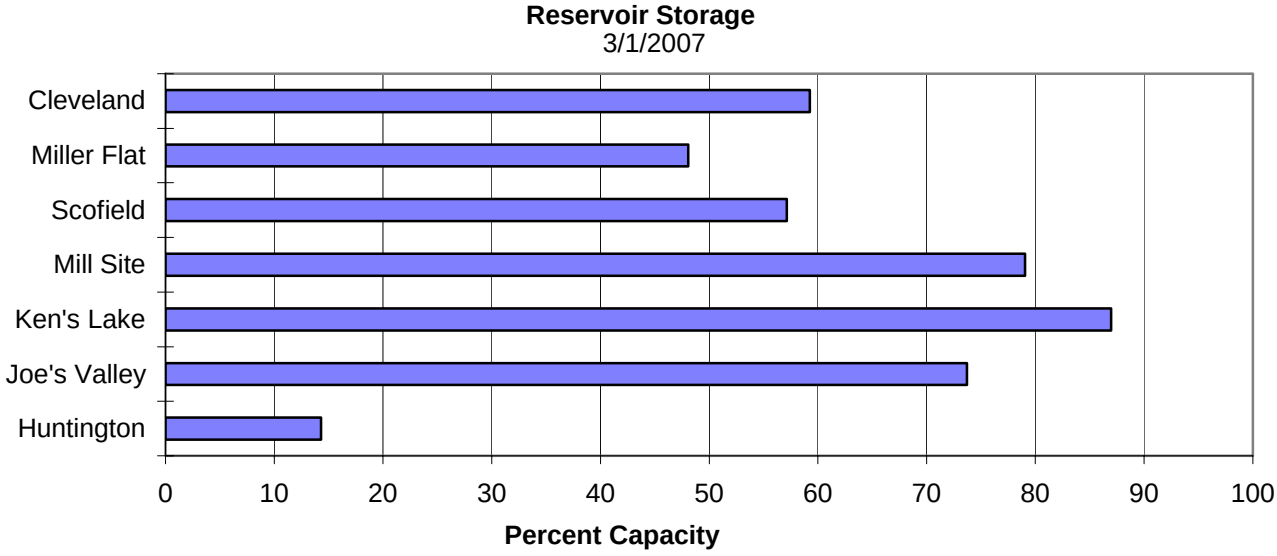
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Carbon, Emery, Wayne, Grand and San Juan Co.
March 1, 2007

Snowpacks in this region are much below normal at 60% of average, about 72% of last year. Individual sites range from 28% to 100% of average, with the Abajo Mountains the driest in the region. It would require an unprecedented 303% of average March snowpack increase to reach an average April 1st value. Precipitation during February was below average at 82%, bringing the seasonal accumulation (Oct-Feb) to 96% of normal. Soil moisture estimates in runoff producing areas are at 48% of saturation in the upper 2 feet of soil compared to 35% last year and up 1% from last month. Forecast streamflows range from 7% to 86% of average. Reservoir storage is at 65% of capacity, same as last year at this time. Surface Water Supply Indices for the area are: Price 36%, San Rafael area 39% and Moab 39%. General runoff and water supply conditions are below normal.







CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.
Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Gooseberry Creek nr Scofield	APR-JUL	4.6	6.3	7.6	64	9.0	11.4	11.9
Price River near Scofield Reservoir	APR-JUL	3.5	16.3	25	56	34	46	45
White River blw Tabbyune Creek	APR-JUL	2.9	5.3	7.3	42	9.7	13.8	17.3
Green River at Green River, UT (2)	APR-JUL	760	1500	2000	63	2500	3240	3170
Huntington Ck Inflow to Electric Lk	APR-JUL	3.6	5.8	7.5	48	9.5	12.7	15.7
Huntington Ck nr Huntington	APR-JUL	5.7	17.2	25	51	33	44	49
Joe's Valley Resv Inflow	APR-JUL	18.5	28	35	60	43	57	58
Ferron Ck (Upper Station) nr Ferron	APR-JUL	15.7	21	25	64	29	37	39
Colorado River Near Cisco (2)	APR-JUL	1770	3100	4000	86	4900	6230	4650
Mill Creek at Sheley Tunnel nr Moab	APR-JUL	1.8	2.5	3.1	62	3.7	4.8	5.0
Seven Mile Ck nr Fish Lake	APR-JUL	2.9	4.1	5.1	73	6.2	7.9	7.0
Muddy Creek nr Emery	APR-JUL	7.6	10.7	13.0	65	15.6	19.8	19.9
North Ck ab R.S. nr Monticello	MAR-JUL	0.0	0.0	0.1	7	0.1	0.2	0.8
South Ck ab Lloyd's Res nr Monticell	MAR-JUL	0.1	0.2	0.3	20	0.5	0.8	1.4
Recapture Ck Bl Johnson Ck nr Blandi	MAR-JUL	0.1	0.4	0.8	16	1.4	2.6	5.0
San Juan River near Bluff (2)	APR-JUL	385	715	940	76	1170	1500	1230

CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNTINGTON NORTH	4.2	0.6	3.8	3.4
JOE'S VALLEY	61.6	45.4	45.7	41.5
KEN'S LAKE	2.3	2.5	2.2	1.3
MILL SITE	16.7	13.2	8.8	84.9
SCOFIELD	65.8	37.6	37.2	34.8

CARBON, EMERY, WAYNE, GRAND, & SAN JUAN Co.
Watershed Snowpack Analysis - March 1, 2007

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
PRICE RIVER	3	57	55
SAN RAFAEL RIVER	3	60	62
MUDDY CREEK	1	47	54
FREMONT RIVER	3	110	68
LASAL MOUNTAINS	1	110	75
BLUE MOUNTAINS	1	176	40
WILLOW CREEK	1	267	68
CARBON, EMERY, WAYNE, GRA	13	72	60

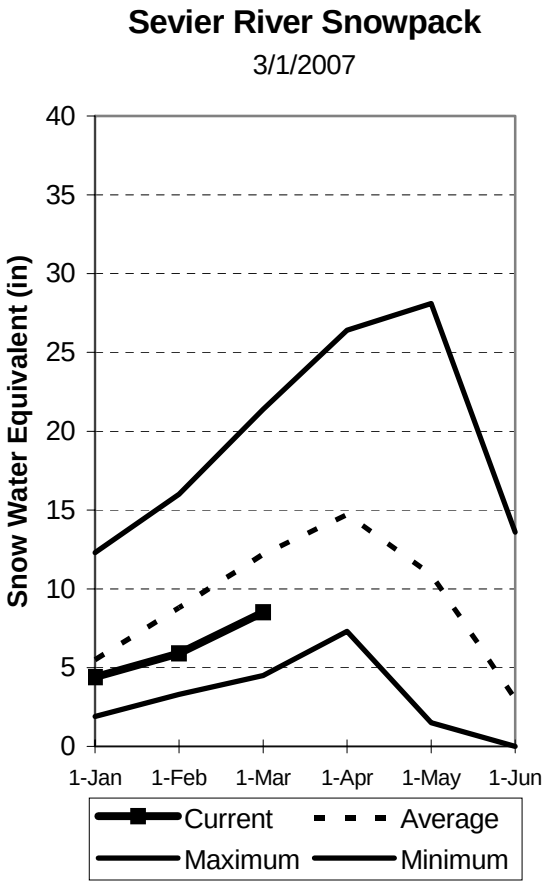
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

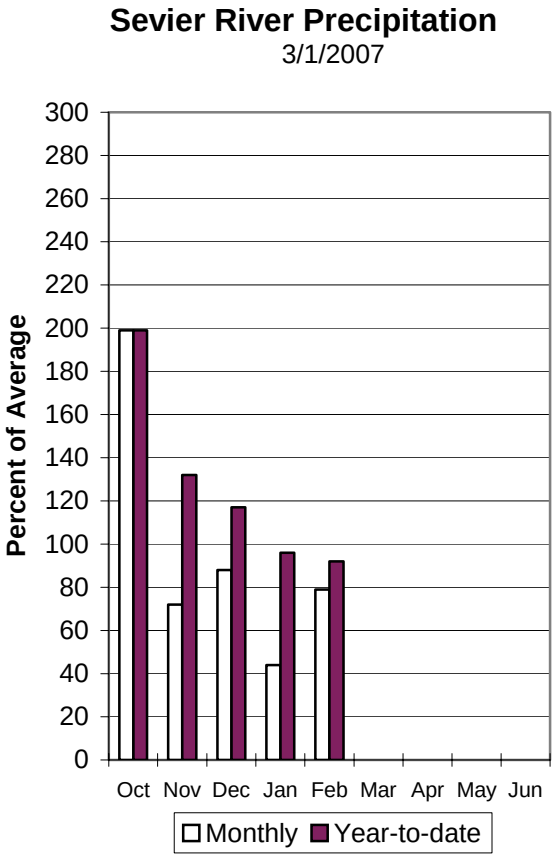
The average is computed for the 1971-2000 base period.

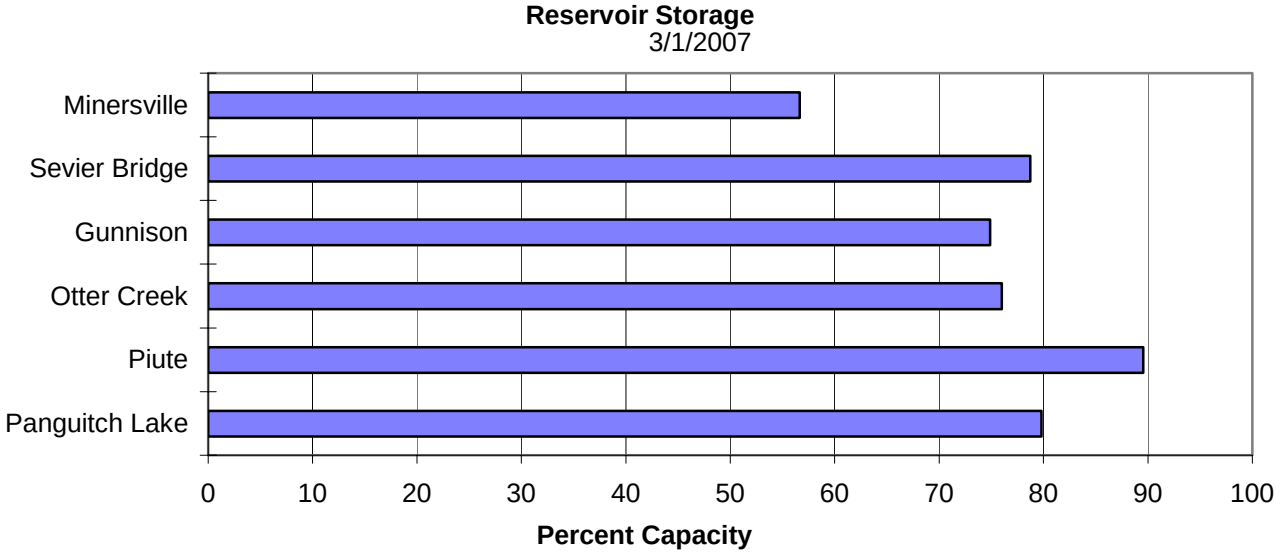
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Sevier and Beaver River Basins
Mar 1, 2007

Snowpacks on the Sevier River Basin are much below normal at 69% of average, about 94% of last year and up 2% relative to last month. Individual sites range from 4% to 93% of average. The Sevier River has an 8% chance at getting back to average snowpack this season. Precipitation during February was below average at 79% of normal, bringing the seasonal accumulation (Oct-Feb) to 92% of average. Soil moisture estimates in runoff producing areas are at 49% of saturation (Sevier) in the upper 2 feet of soil compared to 46% last year. Streamflow forecasts range from 38% to 71% of average. Reservoir storage is at 80% of capacity, 13% less than last year. Surface Water Supply Indices are: Upper Sevier 52%, Lower Sevier 49% and Beaver 40%. Water supply conditions are near average due to reservoir storage but with poor streamflow expected.







SEVIER & BEAVER RIVER BASINS
Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Sevier River at Hatch	APR-JUL	17.3	26	33	60	41	54	55
Sevier River nr Kingston	APR-JUL	33	47	57	64	68	87	89
EF Sevier R nr Kingston	APR-JUL	7.9	16.4	24	63	33	49	38
Sevier R blw Piute Dam	APR-JUL	28	57	82	65	112	165	126
Clear Creek Abv Diversions Nr Sevier	APR-JUL	7.0	11.2	14.6	66	18.4	25	22
Salina Creek at Salina	APR-JUL	2.0	6.5	11.0	56	16.6	27	19.7
Manti Ck Blw Dugway Ck Nr Manti	APR-JUL	7.8	10.7	13.0	71	15.5	19.6	18.3
Sevier R nr Gunnison	APR-JUL	107	147	178	64	210	265	280
Chicken Creek nr Levan	APR-JUL	0.6	1.6	2.6	58	3.8	6.0	4.5
Oak Creek nr Oak City	APR-JUL	0.3	0.6	0.9	54	1.2	1.8	1.7
Beaver River nr Beaver	APR-JUL	8.8	13.3	17.0	63	21	28	27
Minersville Reservoir inflow	APR-JUL	1.2	3.8	6.3	38	9.5	15.3	16.6

SEVIER & BEAVER RIVER BASINS
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
GUNNISON	20.3	14.0	18.0	14.6
MINERSVILLE (RkyFd)	23.3	13.2	21.1	16.2
OTTER CREEK	52.5	39.9	49.0	40.0
PIUTE	71.8	64.3	65.9	53.3
SEVIER BRIDGE	236.0	185.5	222.3	175.6
PANGUITCH LAKE	22.3	17.8	18.5	146.8

SEVIER & BEAVER RIVER BASINS
Watershed Snowpack Analysis - March 1, 2007

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
UPPER SEVIER RIVER (south	8	111	65
EAST FORK SEVIER RIVER	3	109	69
SOUTH FORK SEVIER RIVER	5	113	63
LOWER SEVIER RIVER (inclu	6	85	75
BEAVER RIVER	2	87	66
SEVIER & BEAVER RIVER BAS	16	95	69

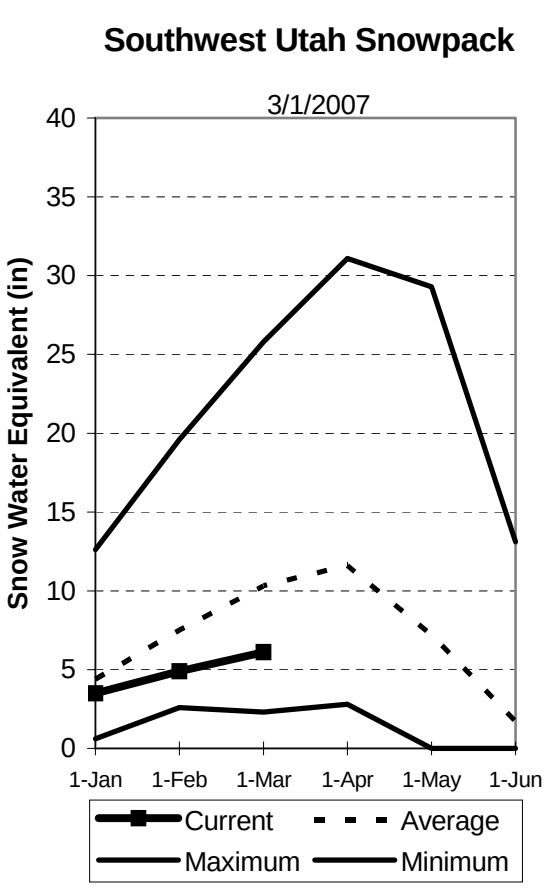
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

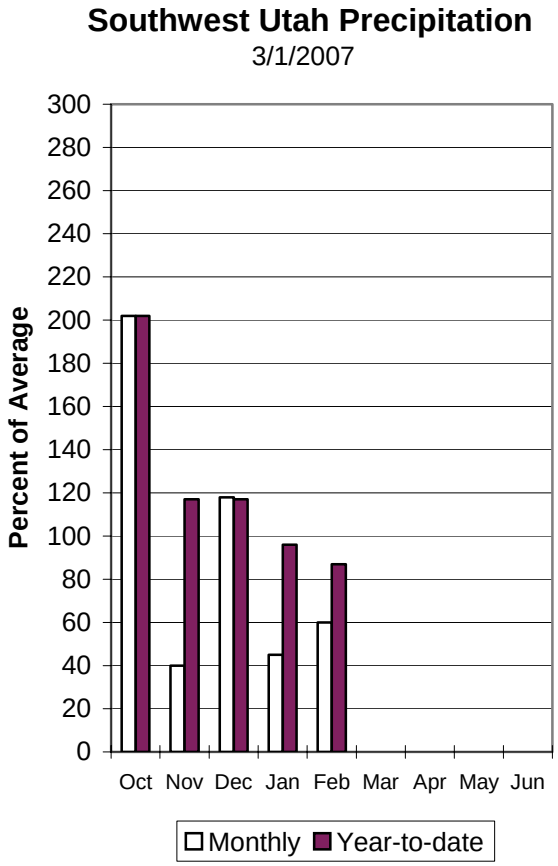
The average is computed for the 1971-2000 base period.

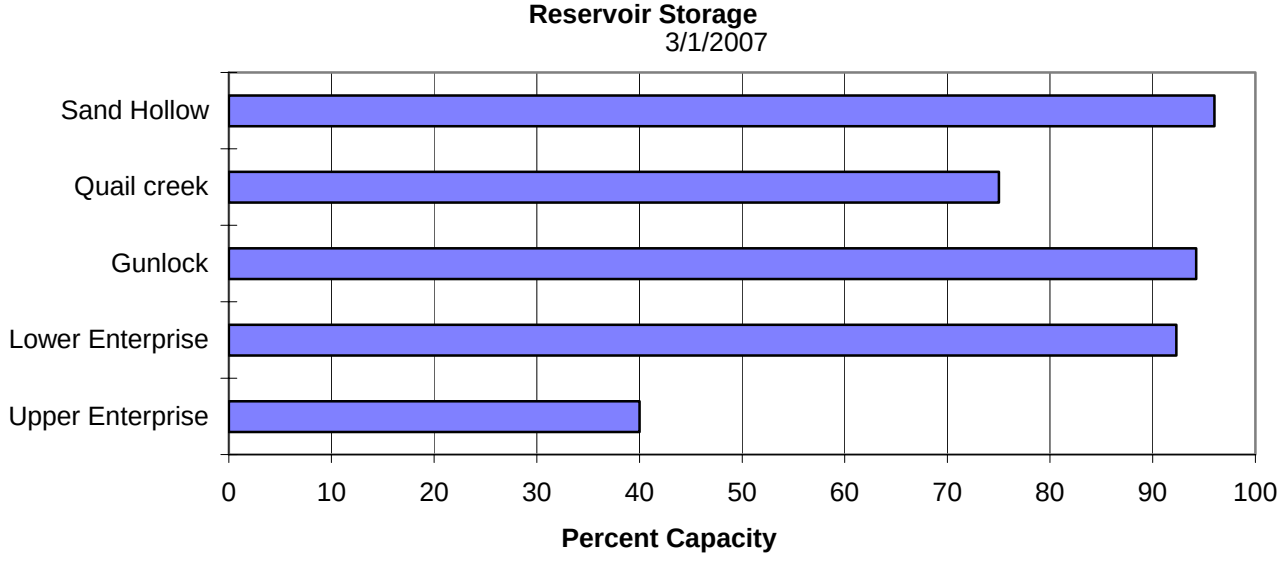
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

E. Garfield, Kane, Washington, & Iron Co.
March 1, 2007

Snowpacks in this region are much below normal at 59% of average, about 141% of last year and down 6% relative to last month. These watersheds have a 14% chance of reaching average snowpack this season. Individual sites range from 12% to 100% of average. Precipitation in the month of February was much below average at 60%, bringing the seasonal accumulation (Oct-Feb) to 87% of average. Soil moisture estimates in runoff producing areas are at 45% of saturation in the upper 2 feet of soil compared to 31% last year. Forecast streamflows range from 46% to 55% of average. Reservoir storage is at 83% of capacity, 8% less than last year. The Surface Water Supply Index is at 33%, indicating below average water supply conditions.







E. GARFIELD, KANE, WASHINGTON, & IRON Co.
Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Lake Powell Inflow (2)	APR-JUL	2650	4410	5600	71	6790	8550	7930
Virgin River at Virgin	APR-JUL	17.3	24	33	52	43	60	64
Virgin River near Hurricane	APR-JUL	17.3	22	32	46	44	65	69
Santa Clara River nr Pine Valley	APR-JUL	1.0	2.1	3.0	55	4.1	6.0	5.5
Coal Creek nr Cedar City	APR-JUL	6.3	9.8	12.7	66	15.9	21	19.3

E. GARFIELD, KANE, WASHINGTON, & IRON Co.
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
GUNLOCK	10.4	9.8	10.4	4.9
LAKE POWELL	24322.0	11560.0	10871.0	---
QUAIL CREEK	40.0	30.0	37.3	29.7
UPPER ENTERPRISE	10.0	4.0	9.0	---
LOWER ENTERPRISE	2.6	2.4	0.0	90.0

E. GARFIELD, KANE, WASHINGTON, & IRON Co.
Watershed Snowpack Analysis - March 1, 2007

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
VIRGIN RIVER	5	133	58
PAROWAN	2	106	74
ENTERPRISE TO NEW HARMONY	2	1280	48
COAL CREEK	2	109	71
ESCALANTE RIVER	2	138	73
E. GARFIELD, KANE, WASHIN	9	138	59

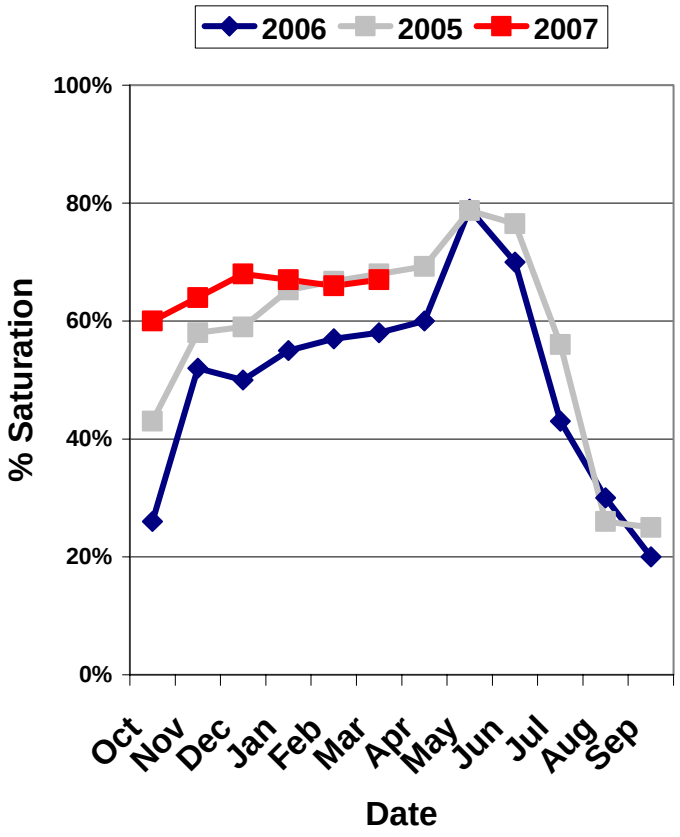
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

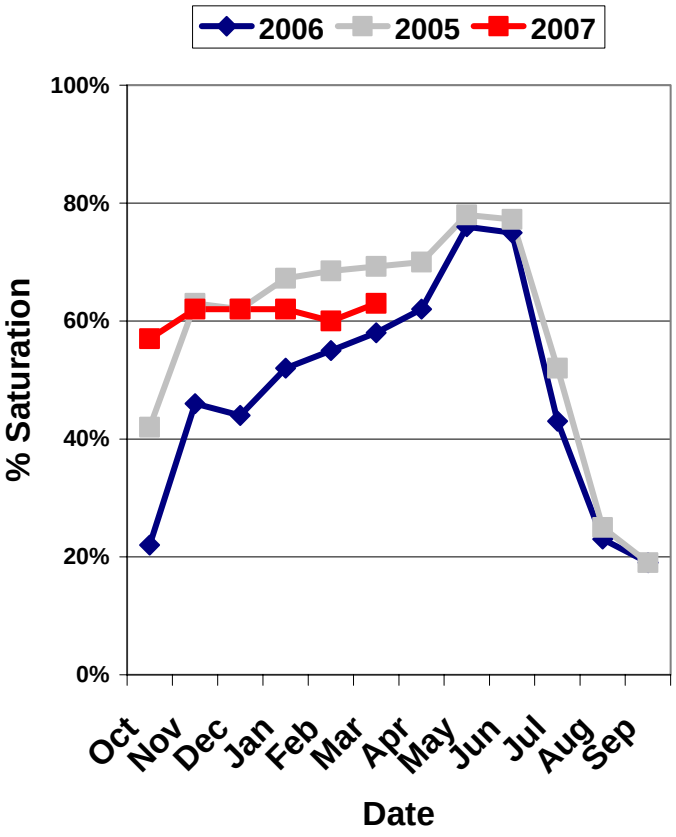
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Watershed Soil Moisture Charts for Utah Water Supply

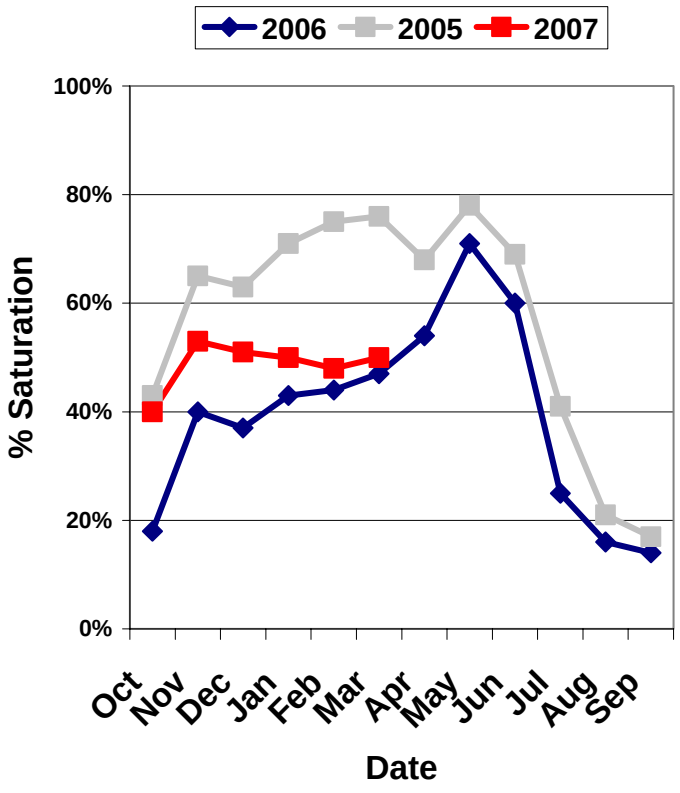
Bear River Soil Moisture



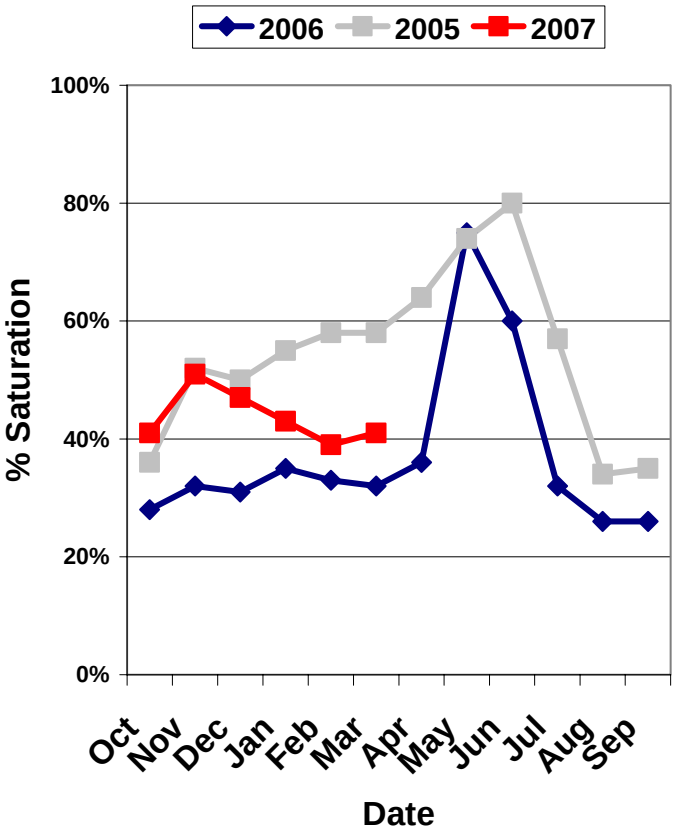
Weber River Soil Moisture



Jordan/Provo River Soil Moisture

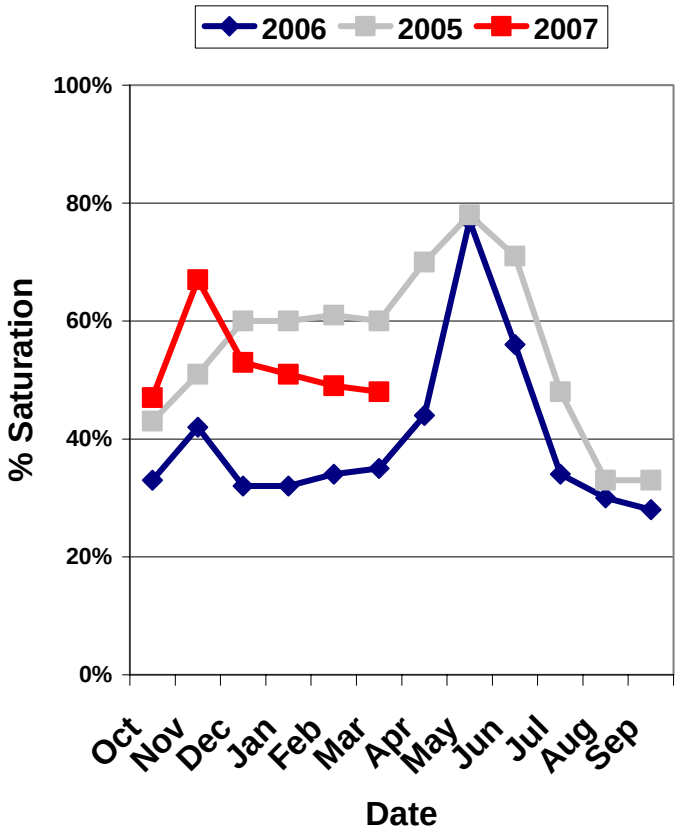


Uintah Basin Soil Moisture

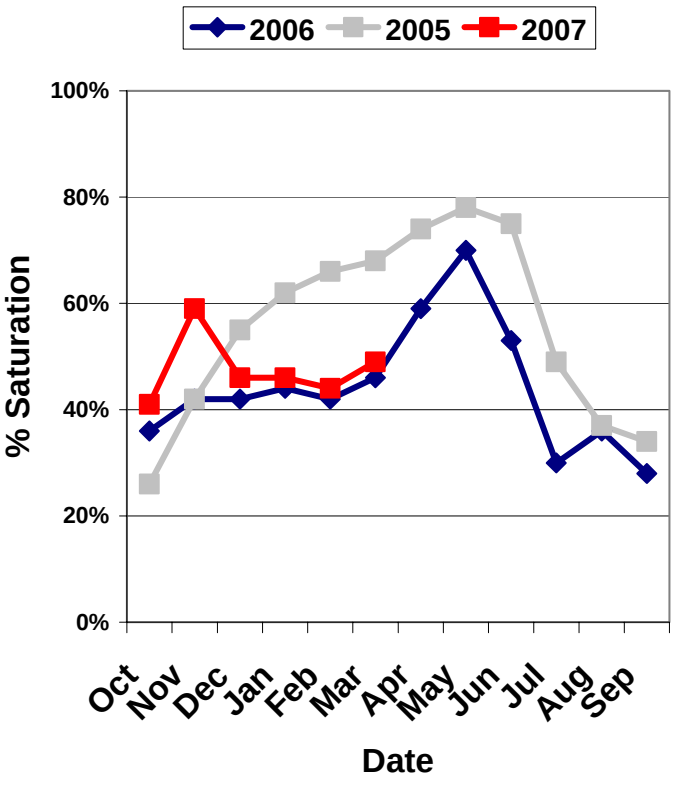


Watershed Soil Moisture Charts for Utah Water Supply

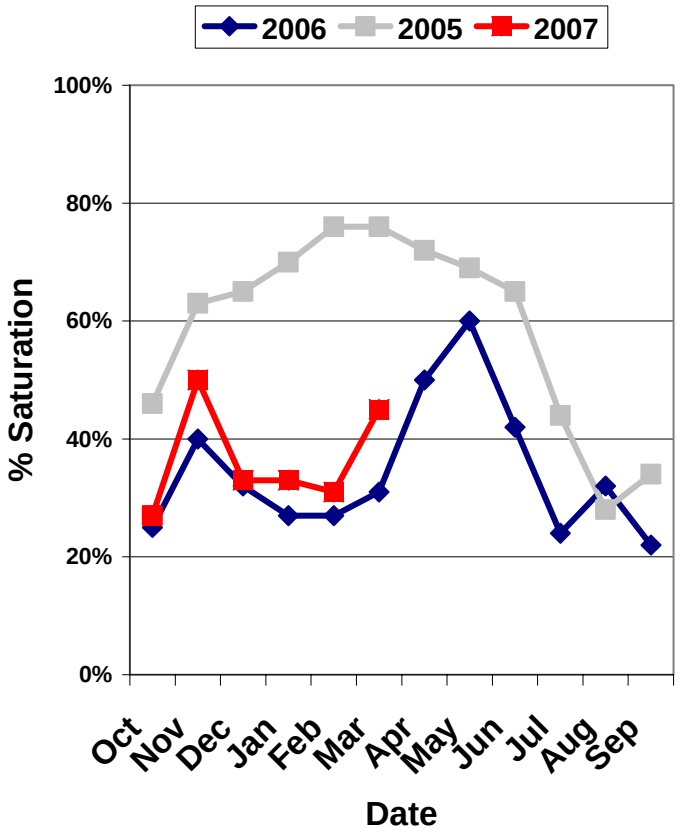
South East Utah Soil Moisture



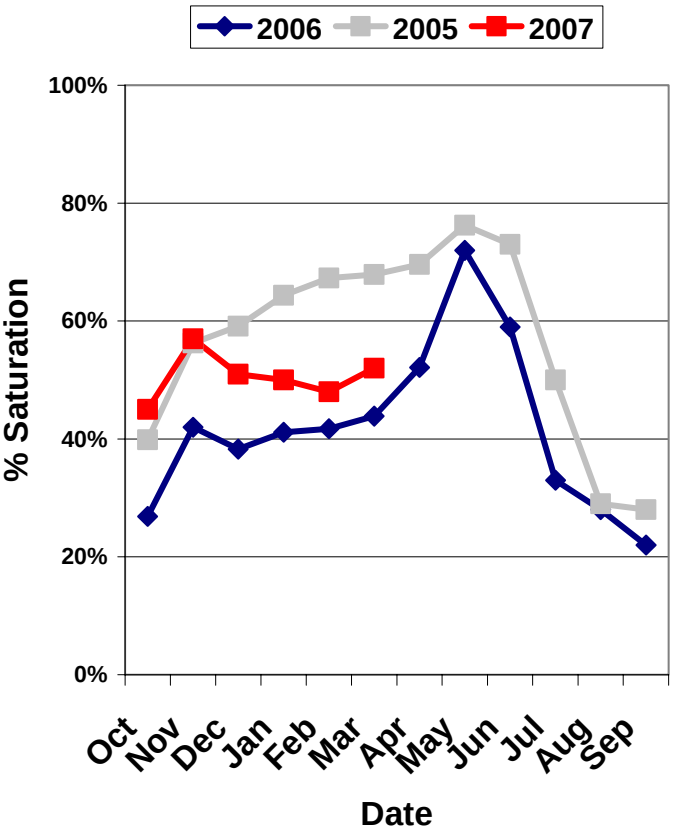
Sevier/Beaver River Soil Moisture



Southwest Utah Soil Moisture



Statewide Soil Moisture



UTAH SURFACE WATER SUPPLY INDEX Snow Surveys NRCS USDA Basin or Region SWSI/% Percentile 1-Mar-07			Years with Similar SWSI
Bear River	-2.43	21%	95,02,06,90
Ogden River	-2.03	26%	04,02,00,91
Weber River	-1.93	27%	91,87,00,89
Provo	0.50	56%	81,70,68,53
West Uintah Basin	2.43	79%	01,06,05,97
East Uintah Basin	-0.43	45%	80,82,96,00
Price River	-1.17	36%	62,93,94,72
San Rafael	-0.93	39%	95,76,88,99
Moab	-0.89	39%	99,96,82,91
Upper Sevier River	0.16	52%	2001,74,94,62
Lower Sevier River	-0.10	49%	89,71,96,74
Beaver River	-0.87	40%	94,89,75,62
Virgin River	-1.39	33%	04,96,85,97

Snow Surveys
245 N Jimmy Doolittle Rd
Salt Lake City, UT
(801) 524-5213

SWSI Scale: -4 to 4
Percentile: 0 - 100%

What is a Surface Water Supply Index?

The Surface Water Supply Index (SWSI) is a predictive indicator of total surface water availability within a watershed for the spring and summer water use seasons. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow which are based on current snowpack and other hydrologic variables. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry) with a value of zero (0) indicating median water supply as compared to historical analysis. SWSI's are calculated in this fashion to be consistent with other hydroclimatic indicators such as the Palmer Drought Index and the Precipitation index.

Utah Snow Surveys has also chosen to display the SWSI as a PERCENT CHANCE OF NON-EXCEEDANCE. While this is a very cumbersome name, it has the simplest application. It can be best thought of as a simple scale of 1 to 99 with 1 being the drought of record (driest possible conditions) and 99 being the flood of record (wettest possible conditions) and a value of 50 representing average conditions. This rating scale is a percentile rating as well, for example a SWSI of 75% means that this years water supply is greater than 75% of all historical events and that only 25% of the time has it been exceeded. Conversely a SWSI of 10% means that 90% of historical events have been greater than this one and that only 10% have had less total water supply. This scale is far more intuitive for most people and is totally comparable between basins: a SWSI of 50% means the same relative ranking on watershed A as it does on watershed B, which may not be strictly true of the +4 to -4 scale.

For more information on the SWSI go to: www.ut.nrcs.usda.gov/snow/ on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

DATA CURRENT AS OF:03/02/07 09:52:13

S N O W C O U R S E D A T A

MARCH 2007

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
AGUA CANYON SNOTEL	8900	3/01	24	5.4	4.8	7.3
ALTA CENTRAL	8800	3/01	90	22.3	45.3	31.1
BEAVER DAMS SNOTEL	8000	3/01	27	6.2	9.4	10.2
BEAVER DIVIDE SNOTEL	8280	3/01	36	6.3	12.4	10.2
BEN LOMOND PK SNOTEL	8000	3/01	67	19.6	37.7	34.3
BEN LOMOND TR SNOTEL	6000	3/01	34	9.1	21.1	19.0
BEVAN'S CABIN	6450	2/26	25	6.8	8.6	9.2
BIG FLAT SNOTEL	10290	3/01	52	10.6	11.8	15.0
BIRCH CROSSING	8100	2/26	21	4.9	4.7	6.7
BLACK FLAT-U.M. CK S	9400	3/01	25	5.0	7.7	8.5
BLACK'S FORK GS-EF	9340	2/24	25	5.4	9.2	7.8
BLACK'S FORK JUNCTN	8930	2/24	29	5.7	9.5	7.7
BOX CREEK SNOTEL	9800	3/01	37	8.6	9.4	11.0
BRIAN HEAD	10000	2/26	45	11.3	11.1	16.5
BRIGHTON SNOTEL	8750	3/01	61	14.9	25.2	20.4
BRIGHTON CABIN	8700	2/28	67	16.0	27.1	23.1
BROWN DUCK SNOTEL	10600	3/01	62	11.7	17.2	15.0
BRYCE CANYON	8000	2/27	1	.2	2.0	4.9
BUCK FLAT SNOTEL	9800	3/01	43	9.7	17.3	15.3
BUCK PASTURE	9700	2/24	50	10.8	18.4	14.0
BUCKBOARD FLAT	9000	2/28	38	6.8	3.5	11.0
BUG LAKE SNOTEL	7950	3/01	53	12.1	21.5	17.1
BURT'S-MILLER RANCH	7900	2/24	22	5.3	4.7	4.7
CAMP JACKSON SNOTEL	8600	3/01	28	5.1	2.9	12.9
CASCADE MOUNTAIN SNO	7770	3/01	50	11.3	16.1	-
CASTLE VALLEY SNOTEL	9580	3/01	41	7.9	8.3	11.8
CHALK CK #1 SNOTEL	9100	3/01	72	17.8	22.8	19.9
CHALK CK #2 SNOTEL	8200	3/01	51	12.1	12.5	12.9
CHALK CREEK #3	7500	2/24	25	6.3	6.5	6.8
CHEPETA SNOTEL	10300	3/01	52	10.3	10.2	11.4
CLAYTON SPRINGS SNTL	10000	3/01	38	7.7	6.5	-
CLEAR CK RIDG #1 SNT	9200	3/01	47	9.1	17.8	16.7
CLEAR CK RIDG #2 SNT	8000	3/01	47	8.6	12.0	12.3
CORRAL	8200	2/25	21	4.7	3.3	-
CURRANT CREEK SNOTEL	8000	3/01	26	6.5	10.8	9.6
DANIELS-STRAWBERRY S	8000	3/01	43	10.5	19.4	15.1
DILL'S CAMP SNOTEL	9200	3/01	35	6.6	14.0	12.3
DONKEY RESERVOIR SNO	9800	3/01	34	6.6	3.6	6.6
DRY BREAD POND SNTL	8350	3/01	54	12.2	19.9	19.0
DRY FORK SNOTEL	7160	3/01	50	11.4	12.2	14.5
EAST WILLOW CREEK SN	8250	3/01	26	4.8	1.8	7.1
FARMINGTON U. SNOTEL	8000	3/01	83	20.5	36.6	27.3
FARMINGTON L. SNOTEL	6780	3/01	53	14.2	19.8	-
FARNSWORTH LK SNOTEL	9600	3/01	62	13.7	12.4	14.8
FISH LAKE	8700	2/25	10	2.1	5.6	7.5
FIVE POINTS LAKE SNO	10920	3/01	49	10.7	15.3	13.8
G.B.R.C. HEADQUARTER	8700	2/26	42	9.3	14.3	13.8
G.B.R.C. MEADOWS	10000	2/26	54	12.5	22.8	19.0
GARDEN CITY SUMMIT	7600	2/24	32	7.5	16.3	13.5
GARDNER PEAK SNOTEL	8350	3/01	31	6.6	4.6	-
GEORGE CREEK	8840	2/27	51	13.0	20.6	17.3
GOOSEBERRY R.S.	8400	2/25	33	7.1	9.3	9.9
GOOSEBERRY R.S. SNTL	7900	3/01	28	7.4	7.0	7.9
GUTZ PEAK SNOTEL	6820	3/01	18	3.8	.0	-
HARDSCRABBLE SNOTEL	7250	3/01	52	12.6	22.3	14.3
HARRIS FLAT SNOTEL	7700	3/01	4	.8	.0	6.9
HAYDEN FORK SNOTEL	9100	3/01	45	10.2	17.6	13.2
HENRY'S FORK	10000	2/24	43	9.0	12.0	10.5
HEWINTA SNOTEL	9500	3/01	37	7.5	10.3	9.1
HICKERSON PARK SNTL	9100	3/01	29	6.4	3.5	5.8
HIDDEN SPRINGS	5500	3/01	14	2.4	6.0	5.9
HOBBLE CREEK SUMMIT	7420	2/24	32	7.9	15.8	13.1
HOLE-IN-ROCK SNOTEL	9150	3/01	33	6.2	5.9	5.7
HORSE RIDGE SNOTEL	8260	3/01	57	13.6	24.4	20.2
HUNTINGTON-HORSESHOE	9800	2/26	39	8.7	21.1	19.4
INDIAN CANYON SNOTEL	9100	3/01	35	8.1	7.8	9.6
JOHNSON VALLEY	8850	2/25	12	2.6	5.7	6.4
JONES CORRAL G.S.	9720	2/25	37	8.1	4.9	-

SNOW COURSE	ELEV.	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
KILFOIL CREEK	7300	2/24	30	6.5	15.3	12.4
KILLYON CANYON	6300	2/27	24	4.1	10.6	8.7
KIMBERLY MINE SNOTEL	9300	3/01	49	11.5	10.0	13.3
KING'S CABIN SNOTEL	8730	3/01	33	6.3	4.7	9.4
KLONDIKE NARROWS	7400	2/24	37	10.1	22.7	16.8
KOLOB SNOTEL	9250	3/01	54	11.9	9.4	17.8
LAKEFORK #1 SNOTEL	10100	3/01	40	7.5	8.7	10.5
LAKEFORK BASIN SNTL	10900	3/01	57	10.8	19.3	16.6
LAKEFORK MOUNTAIN #3	8400	2/24	22	5.5	4.1	6.1
LAMBS CANYON	7400	2/28	53	11.5	17.5	14.5
LASAL MOUNTAIN LOWER	8800	2/28	27	3.5	4.4	8.1
LASAL MOUNTAIN SNTL	9850	3/01	36	8.0	7.3	10.7
LIGHTNING RIDGE SNTL	8220	3/01	48	11.7	18.3	-
LILY LAKE SNOTEL	9050	3/01	49	10.2	12.1	10.8
LITTLE BEAR LOWER	6000	2/24	24	6.3	11.7	10.2
LITTLE BEAR SNOTEL	6550	3/01	29	7.8	11.8	12.8
LITTLE GRASSY SNOTEL	6100	3/01	9	1.2	.0	5.8
LONG FLAT SNOTEL	8000	3/01	21	5.2	.5	7.4
LONG VALLEY JCT. SNT	7500	3/01	4	.7	.0	5.8
LOOKOUT PEAK SNOTEL	8200	3/01	73	17.4	30.1	20.1
LOST CREEK RESERVOIR	6130	2/24	6	1.9	8.5	5.9
LOUIS MEADOW SNOTEL	6700	3/01	51	14.6	21.1	-
MAMMOTH-COTTONWD SNT	8800	3/01	43	8.8	17.4	17.6
MERCHANT VALLEY SNTL	8750	3/01	37	6.8	8.3	11.4
MIDDLE CANYON	7000	2/26	32	8.3	13.4	12.2
MIDWAY VALLEY SNOTEL	9800	3/01	62	15.1	13.5	19.4
MILL CREEK	6950	2/28	56	11.9	18.7	16.6
MILL-D NORTH SNOTEL	8960	3/01	69	14.3	27.1	21.0
MILL-D SOUTH FORK	7400	2/28	53	11.5	19.8	16.9
MINING FORK SNOTEL	8000	3/01	49	12.3	17.0	14.9
MONTE CRISTO SNOTEL	8960	3/01	70	17.3	27.3	24.7
MOSBY MTN. SNOTEL	9500	3/01	45	8.0	7.7	9.3
MT.BALDY R.S.	9500	2/26	56	13.2	21.8	19.9
MUD CREEK #2	8600	2/24	36	7.3	14.2	12.0
OAK CREEK	7760	2/26	34	8.5	8.2	10.0
PANGUITCH LAKE R.S.	8200	2/26	7	1.6	2.8	4.0
PARLEY'S CANYON SNTL	7500	3/01	56	12.2	16.4	15.3
PARRISH CREEK SNOTEL	7740	3/01	69	17.1	23.0	-
PAYSON R.S. SNOTEL	8050	3/01	39	9.5	14.4	17.2
PICKLE KEG SNOTEL	9600	3/01	49	10.7	15.5	14.1
PINE CREEK SNOTEL	8800	3/01	55	15.9	12.5	19.3
RED PINE RIDGE SNTL	9200	3/01	40	9.2	14.9	14.2
REDDEN MINE LOWER	8500	2/24	42	10.8	16.3	15.1
REES'S FLAT	7300	2/26	39	8.3	10.5	11.2
ROCK CREEK SNOTEL	7900	3/01	31	5.8	9.4	7.9
ROCKY BN-SETTLEMT SN	8900	3/01	54	14.0	16.6	21.2
SEELEY CREEK SNOTEL	10000	3/01	29	6.9	10.6	12.3
SMITH MOREHOUSE SNTL	7600	3/01	47	11.0	12.8	12.4
SNOWBIRD SNOTEL	9700	3/01	85	19.7	43.1	28.3
SPIRIT LAKE	10300	2/24	41	9.5	7.0	10.5
SQUAW SPRINGS	9300	2/25	17	3.7	6.6	6.6
STEEL CREEK PARK SNO	10100	3/01	45	10.3	13.2	12.7
STILLWATER CAMP	8550	2/24	35	7.0	9.6	8.8
STRAWBERRY DIVIDE SN	8400	3/01	48	10.5	18.2	16.3
SUSC RANCH	8200	2/26	14	4.6	1.5	8.1
TALL POLES	8800	2/26	37	8.6	8.8	12.1
TEMPLE FORK SNOTEL	7410	3/01	52	10.2	19.7	-
THAYNES CANYON SNTL	9200	3/01	63	14.7	23.1	19.3
THISTLE FLAT	8500	2/26	46	9.8	14.8	-
TIMBERLINE	9100	2/25	28	6.8	5.2	-
TIMPANOGOS DIVIDE SN	8140	3/01	58	12.5	20.2	20.4
TONY GROVE LK SNOTEL	8400	3/01	85	22.4	46.9	30.0
TONY GROVE R.S.	6250	2/24	24	6.8	15.0	11.3
TRIAL LAKE	9960	2/24	54	12.0	26.5	20.3
TRIAL LAKE SNOTEL	9960	3/01	58	13.1	24.7	20.6
TROUT CREEK SNOTEL	9400	3/01	38	7.1	5.1	8.1
UPPER JOES VALLEY	8900	2/25	21	4.5	10.6	9.3
VERNON CREEK SNOTEL	7500	3/01	32	6.6	6.9	10.1
VIPONT	7670	2/25	38	10.0	19.8	12.2
WEBSTER FLAT SNOTEL	9200	3/01	37	8.3	8.0	13.5
WHITE RIVER #1 SNTL	8550	3/01	36	7.5	9.7	11.6
WHITE RIVER #3	7400	2/24	14	4.0	9.7	7.8
WIDTSOE #3 SNOTEL	9500	3/01	33	5.3	4.1	9.7
WRIGLEY CREEK	9000	2/25	25	5.2	9.5	9.6
YANKEE RESERVOIR	8700	2/27	28	5.5	6.2	8.4

Issued by

Arlen Lancaster
Chief
Natural Resources Conservation Service
U.S. Department of Agriculture

Released by

Sylvia Gillen
State Conservationist
Natural Resources Conservation Service
Salt Lake City, Utah

Prepared by
Snow Survey Staff
Randall Julander, Supervisor
Ray Wilson, Hydrologist
Timothy Bardsley, Hydrologist
Mike Bricco, Hydrologist
Brooke Nelson, Hydrologist
Bob Nault, Electronics Technician

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Snow Survey, NRCS, USDA
245 North Jimmy Doolittle Road
Salt Lake City, UT 84116
(801) 524-5213

Utah Water Supply Outlook Report

Natural Resources Conservation Service
Salt Lake City, UT